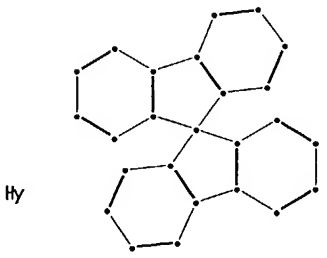
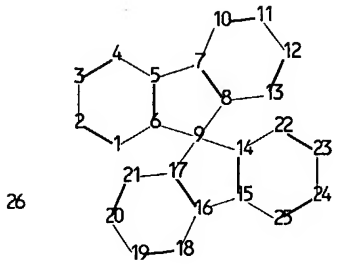
C:\Program Files\Common Files\System\Mapi\1033\NT



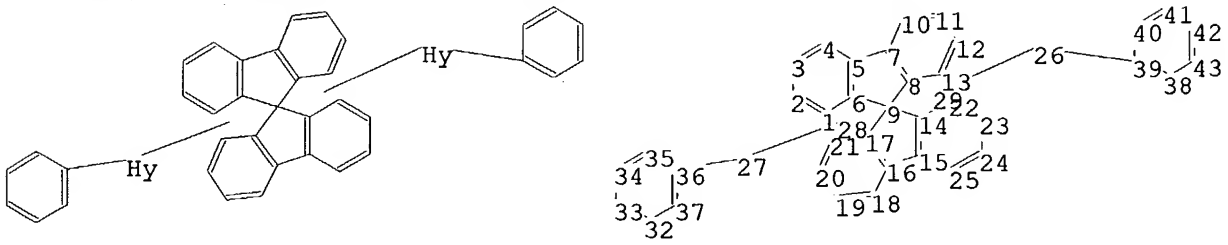


chain nodes :
    26
ring nodes :
    1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
ring bonds :
    1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-9 7-8 7-10 8-9 8-13 9-14 9-17 10-11 11-12
    12-13 14-15 14-22 15-16 15-25 16-17 16-18 17-21 18-19 19-20 20-21 22-23 23-24
    24-25
exact/norm bonds :
    5-7 6-9 8-9 9-14 9-17 15-16
normalized bonds :
    1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-10 8-13 10-11 11-12 12-13 14-15 14-22 15-25
    16-17 16-18 17-21 18-19 19-20 20-21 22-23 23-24 24-25

Match level :
    1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom
    12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom 20:Atom 21:Atom
    22:Atom 23:Atom 24:Atom 25:Atom 26:Atom
Generic attributes :
    26:
    Saturation   : Unsaturated
    Number of Carbon Atoms : less than 7
    Number of Hetero Atoms : 2 or more
    Type of Ring System   : Monocyclic

Element Count :
    Node 26: Limited
        C,C4
        N,N2
        O,O0
        S,S0

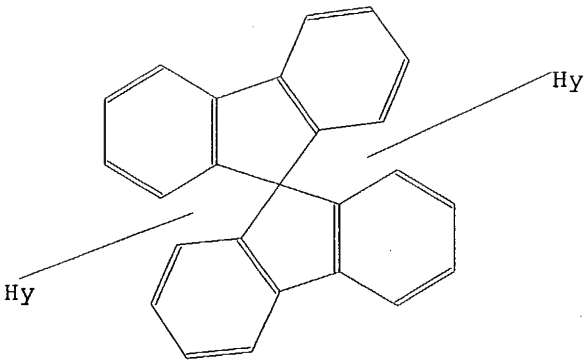
=>
Uploading C:\Program Files\Common Files\System\Mapi\1033\NT\10759046.str

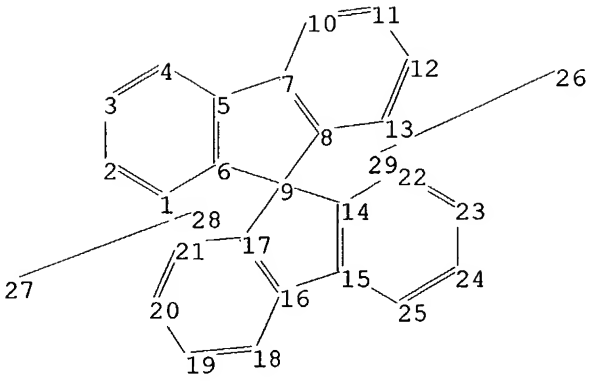


chain nodes :
26 27
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
24 25 32 33 34 35 36 37 38 39 40 41 42 43
chain bonds :
26-39 27-36
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-9 7-8 7-10 8-9 8-13 9-14 9-17 10-11
11-12 12-13 14-15 14-22 15-16 15-25 16-17 16-18 17-21 18-19 19-20 20-21
22-23 23-24 24-25 32-33 32-37 33-34 34-35 35-36 36-37 38-39 38-43 39-40
40-41 41-42 42-43
exact/norm bonds :
5-7 6-9 8-9 9-14 9-17 15-16 26-39 27-36
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-10 8-13 10-11 11-12 12-13 14-15 14-22
15-25 16-17 16-18 17-21 18-19 19-20 20-21 22-23 23-24 24-25 32-33 32-37
33-34 34-35 35-36 36-37 38-39 38-43 39-40 40-41 41-42 42-43

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom
20:Atom 21:Atom 22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:CLASS
29:CLASS 32:Atom 33:Atom 34:Atom 35:Atom 36:Atom 37:Atom 38:Atom 39:Atom
40:Atom 41:Atom 42:Atom 43:Atom
Generic attributes :
26:
Saturation : Unsaturated
Number of Carbon Atoms : less than 7
Number of Hetero Atoms : 2 or more
Type of Ring System : Monocyclic
27:
Saturation : Unsaturated
Number of Carbon Atoms : less than 7
Number of Hetero Atoms : 2 or more

```
Type of Ring System    : Monocyclic

Element Count :
Node 26: Limited
    C,C4
    N,N2
    O,O0
    S,S0

Node 27: Limited
    C,C4
    N,N2
    O,O0
    S,S0




L1      STRUCTURE UPLOADED

=> d l1
L1 HAS NO ANSWERS
L1              STR
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

Structure attributes must be viewed using STN Express query preparation.


=> s l1 sss sam
SAMPLE SEARCH INITIATED 19:22:19 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -    590 TO ITERATE

100.0% PROCESSED     590 ITERATIONS                                  0 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:        10343 TO    13257
PROJECTED ANSWERS:               0 TO        0

L2            0 SEA SSS SAM L1

=>
Uploading C:\Program Files\Common Files\System\Mapi\1033\NT\10759046 (a).str
```



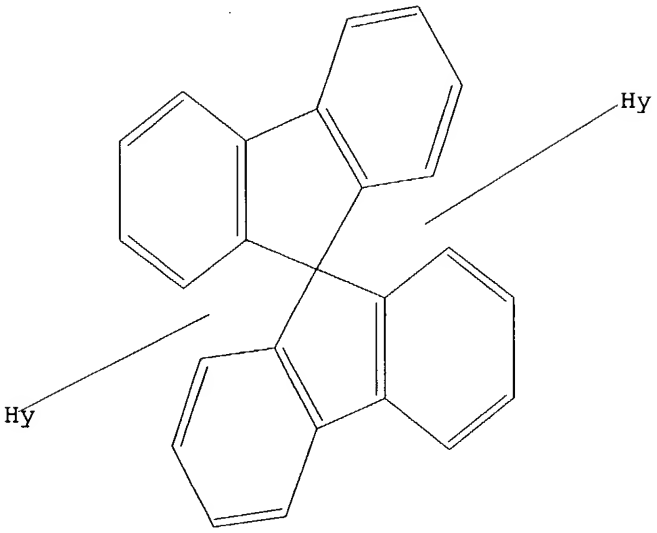


chain nodes :
26 27
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-9 7-8 7-10 8-9 8-13 9-14 9-17 10-11 11-12 12-13 14-15 14-22 15-16 15-25 16-17 16-18 17-21 18-19 19-20 20-21 22-23 23-24 24-25
exact/norm bonds :
5-7 6-9 8-9 9-14 9-17 15-16
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-10 8-13 10-11 11-12 12-13 14-15 14-22 15-25 16-17 16-18 17-21 18-19 19-20 20-21 22-23 23-24 24-25

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom 20:Atom 21:Atom 22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:CLASS 29:CLASS
Generic attributes :
26:
Saturation : Unsaturated
Number of Carbon Atoms : less than 7
Number of Hetero Atoms : 2 or more
Type of Ring System : Monocyclic
27:
Saturation : Unsaturated
Number of Carbon Atoms : less than 7
Number of Hetero Atoms : 2 or more
Type of Ring System : Monocyclic

Element Count :
Node 26: Limited
C,C4
N,N2
O,O0

```
    S,S0

Node 27: Limited
    C,C4
    N,N2
    O,O0
    S,S0


L3      STRUCTURE UPLOADED

=> d l3
L3 HAS NO ANSWERS
L3                STR
```



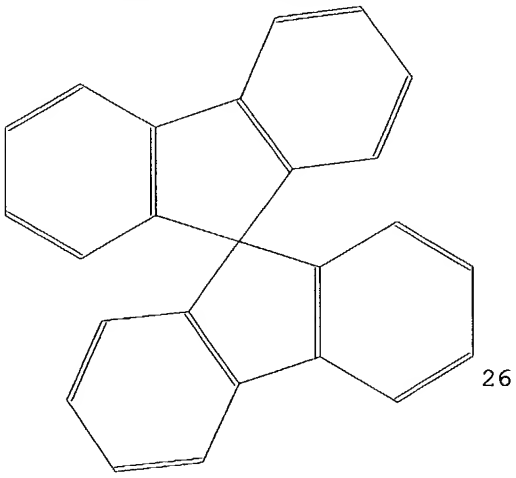

```
Structure attributes must be viewed using STN Express query preparation.


=> s l3 sss sa
COMBINATION OF STRUCTURE AND TEXT TERMS NOT VALID
The query entered contains both search terms created by
structure-building or screen commands and text search terms.  L#s
created via the STRUCTURE or SCREEN commands must be searched in the
structures files separately from text terms or profiles.  The L#
answer sets from structure searches can be used in crossover searches
and can be combined with text terms.

=> s l3 sss sam
SAMPLE SEARCH INITIATED 19:23:16 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -    770 TO ITERATE

100.0% PROCESSED     770 ITERATIONS                                0 ANSWERS
SEARCH TIME: 00.00.01
```

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 13736 TO 17064
PROJECTED ANSWERS: 0 TO 0

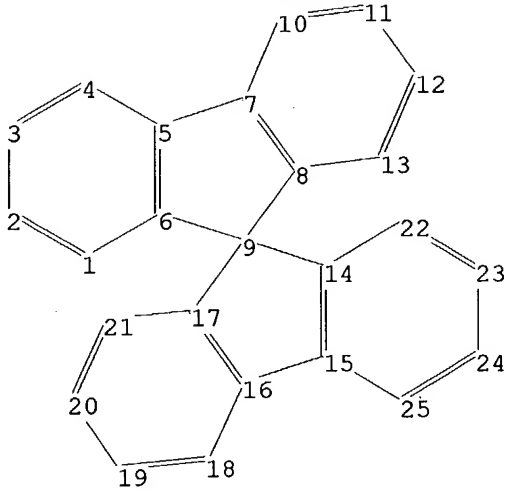
L4 0 SEA SSS SAM L3

=>
Uploading C:\Program Files\Common Files\System\Mapi\1033\NT\10759046 (b).str

Hy



26



chain nodes :
26
ring nodes :
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-9 7-8 7-10 8-9 8-13 9-14 9-17 10-11 11-12 12-13 14-15 14-22 15-16 15-25 16-17 16-18 17-21 18-19 19-20 20-21 22-23 23-24 24-25
exact/norm bonds :
5-7 6-9 8-9 9-14 9-17 15-16
normalized bonds :
1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-10 8-13 10-11 11-12 12-13 14-15 14-22 15-25 16-17 16-18 17-21 18-19 19-20 20-21 22-23 23-24 24-25

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom 20:Atom 21:Atom 22:Atom 23:Atom 24:Atom 25:Atom 26:Atom
Generic attributes :
26:
Saturation : Unsaturated
Number of Carbon Atoms : less than 7
Number of Hetero Atoms : 2 or more
Type of Ring System : Monocyclic

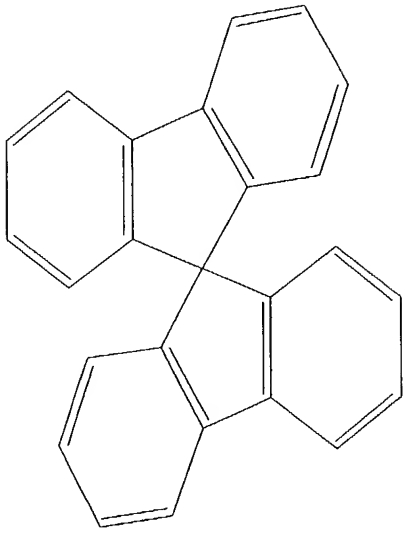
Element Count :
Node 26: Limited

C,C4
N,N2
O,O0
S,S0

L5 STRUCTURE UPLOADED

=> d l5
L5 HAS NO ANSWERS
L5 STR

Hy



Structure attributes must be viewed using STN Express query preparation.

=> s l5 sss sam
SAMPLE SEARCH INITIATED 19:24:05 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 770 TO ITERATE

100.0% PROCESSED 770 ITERATIONS 0 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 13736 TO 17064
PROJECTED ANSWERS: 0 TO 0

L6 0 SEA SSS SAM L5

=> s l5 sss ful
FULL SEARCH INITIATED 19:24:14 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 15746 TO ITERATE

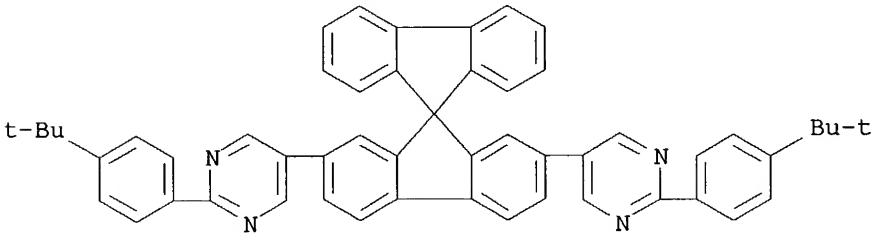
100.0% PROCESSED 15746 ITERATIONS 1 ANSWERS
SEARCH TIME: 00.00.01

L7 1 SEA SSS FUL L5

=> => s l7
L8 1 L7

=> d l8 bib,ab,hitstr

L8 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:542530 CAPLUS
DN 137:239381
TI Highly bright blue organic light-emitting devices using spirobifluorene-cored conjugated compounds
AU Wu, C. C.; Lin, Y. T.; Chiang, H. H.; Cho, T. Y.; Chen, C. W.; Wong, K. T.; Liao, Y. L.; Lee, G. H.; Peng, S. M.
CS Graduate Institute of Electronics Engineering, Graduate Institute of Electro-Optical Engineering, Department of Electrical Engineering, National Taiwan University, Taipei, 10617, Taiwan
SO Applied Physics Letters (2002), 81(4), 577-579
CODEN: APPLAB; ISSN: 0003-6951
PB American Institute of Physics
DT Journal
LA English
AB An efficient and morphol. stable pyrimidine-containing spirobifluorene-cored oligoaryl, 2,7-bis[2-(4-tert-butylphenyl)pyrimidine-5-yl]-9,9'-spirobifluorene (TBPSF), as an emitter or a host for blue organic light-emitting devices (OLEDs), is reported. The steric hindrance inherent with the mol. structure renders the material a record-high neat-film photoluminescence (PL) quantum yield of 80% as a pure blue emitter (PL peak at 430 nm) of low mol. weight, and a very high glass-transition temperature (Tg) of 195°. Blue OLEDs employing this compound as the emitter or the emitting host exhibit unusual endurance for high currents over 5000 mA/cm2. When TBPSF was used as a host for perylene in a blue OLED, maximal brightness of .apprx.80000 cd/m2 had been achieved, representing the highest values reported for blue OLEDs under d.c. driving.
IT **459216-40-1**
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); PROC (Process); USES (Uses)
(highly bright blue organic light-emitting devices using spirobifluorene-cored conjugated compds.)
RN 459216-40-1 CAPLUS
CN Pyrimidine, 5,5'-(9,9'-spirobi[9H-fluorene]-2,7-diyl)bis[2-[4-(1,1-dimethylethyl)phenyl]- (9CI) (CA INDEX NAME)



RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
=> => d his

     (FILE 'HOME' ENTERED AT 19:21:48 ON 20 MAY 2004)

     FILE 'REGISTRY' ENTERED AT 19:21:52 ON 20 MAY 2004
L1                STRUCTURE UPLOADED
L2              0 S L1 SSS SAM
L3                STRUCTURE UPLOADED
L4              0 S L3 SSS SAM
L5                STRUCTURE UPLOADED
L6              0 S L5 SSS SAM
L7              1 S L5 SSS FUL

     FILE 'CAPLUS' ENTERED AT 19:24:23 ON 20 MAY 2004
L8              1 S L7

     FILE 'CAOLD' ENTERED AT 19:25:06 ON 20 MAY 2004

=> s l7
L9              0 L7

=> log y
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                      ENTRY    SESSION
FULL ESTIMATED COST                                    0.42     162.50

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
                                                      ENTRY    SESSION
CA SUBSCRIBER PRICE                                    0.00      -0.69

STN INTERNATIONAL LOGOFF AT 19:25:17 ON 20 MAY 2004
```